

Name: _____

Date: _____

Calculus: Limit Definition of Derivative

Use the Limit Definition of Derivative $f'(x) = \lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h}$ to find $f'(x)$ for each of the following:

1) $f(x) = x^2 + 2$

2) $f(x) = 3x - 5$

3) $f(x) = 3 - x^2$

4) $f(x) = 4x + 5$

5) $f(x) = 2 - x$

6) $f(x) = \frac{1}{x}$

7) $f(x) = \sqrt{x-1}$

8) $f(x) = x^3 - 2x^2 + x - 1$